

**WHAT IS CLAIMED IS:**

1. A method for determination of a pipette tip's condition, comprising:  
  
measuring pressure in a nozzle;  
  
acquiring a pipette tip with the nozzle;  
  
determining whether said pressure in the nozzle changes upon acquisition of  
the pipette tip; and  
  
ascertaining the condition of the acquired pipette tip based on the change in air  
pressure.
2. The method according to claim 1, wherein the ascertaining comprises:  
  
determining that an acquired pipette tip is defective if said air pressure remains  
substantially constant during acquisition of said acquired pipette tip.
3. The method according to claim 2, further comprising:  
  
discarding the defective acquired pipette tip.
4. The method according to claim 1, wherein the ascertaining comprises:  
  
determining that a pipette tip is non-defective if there is a change in air  
pressure during acquisition of said acquired pipette tip.
5. The method according to claim 4, wherein the ascertaining comprises:  
  
determining that the acquired pipette tip is non-defective if there is a positive  
change in air pressure.

6. The method according to claim 4, further comprising:

discarding the non defective pipette tip after use of the pipette tip.

7. A method for determination of a pipette tip's condition, comprising:

measuring pressure in a nozzle;

acquiring a pipette tip with the nozzle;

determining a maximum air pressure in the nozzle upon acquisition of the pipette tip; and

ascertaining the acquired pipette tip's condition based on the rate of change in air pressure after the maximum air pressure was reached.

8. The method according to claim 7, wherein the ascertaining comprises:

determining the rate of change of air pressure for a known non-defective acquired pipette tip.

9. The method according to claim 8, wherein the ascertaining comprises:

determining a defective pipette tip if the rate of change of air pressure is less than the rate of change of air pressure for the known non-defective pipette tips.

10. The method according to claim 8, wherein the ascertaining comprises:

determining a non-defective pipette tip if the rate of change is equal to or

greater than the rate of change for the known non-defective pipette tip.

11. A method for discarding a non-defective pipette tip, comprising:  
controlling an ejection assembly to engage said pipette tip from said nozzle;  
creating an air flow in said nozzle;  
determining whether said air flow causes a change in pressure in said nozzle;

and

if said determining determines that substantially no pressure change has occurred ascertaining that the non-defective pipette tip has not been discarded.

12. The method according to claim 11, further comprising:

if said determining determines that a substantial pressure change has occurred ascertaining that the non-defective pipette tip has been discarded.

13. A system for determination of a condition of a pipette tip, comprising:

an air pump in communication with a nozzle; and

a pressure transducer, adapted to measure a change in air pressure in the nozzle as a pipette tip is acquired by the nozzle.

14. The system according to claim 13, further comprising:

a processor adapted to determine that an acquired pipette tip is defective if said air pressure remains substantially constant during acquisition of said acquired pipette tip.

15. The system according to claim 13, further comprising:

a processor adapted to determine that a pipette tip is non-defective if there is a change in air pressure during acquisition of said acquired pipette tip.

16. The system according to claim 13, further comprising:

a processor adapted to control an ejection assembly to eject the pipette tip from the nozzle.

17. A system for discarding a non-defective pipette tip, comprising:

an air pump with a nozzle;

a pressure transducer, adapted to measure a change in air pressure in the nozzle as the pipette tip is acquired by the nozzle; and

an ejection assembly adapted to eject a non-defective pipette tip.

18. The system according to claim 17, further comprising:

a processor adapted to control the ejection assembly to eject said non-defective pipette tip from the nozzle.

19. A method for detecting a level of liquid in a container using a pipette tip, comprising:

moving the pipette tip toward the liquid in the container without aspirating through said pipette tip while detecting for a change in air pressure in said pipette tip; and

ascertaining that the pipette tip has entered the fluid holding container when said change in air pressure is detected.

20. A system for detecting a level of fluid in a container using a pipette tip, comprising:

an air pump in communication with a nozzle; and

a pressure transducer, adapted to measure a change in air pressure in the nozzle as the pipette tip is inserted into the fluid holding container.

21. The system according to claim 20, further comprising:

a processor for ascertaining that the pipette tip has entered the fluid holding container when said change in air pressure is detected.